

Att'y Ref. No. 003-066

U.S. App. No.: 10/625,468**REMARKS**

Favorable reconsideration, reexamination, and allowance of the present patent application are respectfully requested in view of the foregoing amendments and the following remarks.

Information Disclosure Statement (IDS)

At page 2 of the Office Action, the IDS filed 24 October 2003 was objected to for allegedly failing to satisfy 37 C.F.R. § 1.98. Applicant respectfully requests reconsideration of this objection, and full consideration of the documents cited in the October 24th IDS.

More specifically, the Office Action alleged that the October 24th IDS did not include a 'concise statement' as required by Rule 98(a)(3) for a French patent document and a German patent document. Applicant notes that the examiner-partially-initialed PTO-1449 that was returned with the Office Action indicated that the Swiss Search Report was considered, and that the Swiss Search Report lists both the French and German documents and includes the designation "A" adjacent to both.

M.P.E.P. § 609 III (A)(3) states, in part,

Where the information listed is not in the English language, but was cited in a search report or other action by a foreign patent office in a counterpart foreign application, the requirement for a concise explanation of relevance can be satisfied by submitting an English-language version of the search report or action which indicates the degree of relevance found by the foreign office. **This may be an explanation of which portion of the reference is particularly relevant, to which claims it applies, or merely an "X", "Y", or "A" indication on a search report.**

(Emphasis added)

Thus, the citation of the French and German patent documents in the October 24th IDS was proper and complied with Rule 98, because the documents were cited in a corresponding foreign application, a copy of a Search Report issued in the foreign application was attached, and the Search Report included a letter designation adjacent to the citation of each document.

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For at least the foregoing reasons, Applicant respectfully submits that the October 24th IDS fully complied with 37 C.F.R. §§ 1.97, 1.98, and therefore respectfully requests withdrawal of the objection thereto, consideration of all of the documents cited therein, and return to Applicant of a copy of the Examiner-initialed PTO-1449. For Mr. Benson's convenience, a clean PTO-1449 is enclosed.

Objection to the Disclosure

At page 2 of the Office Action, the disclosure as a whole was objected to because two paragraphs referred to claims by number. Applicant respectfully requests reconsideration of this objection.

By way of the foregoing amendments, paragraphs [0001] and [0011] of the specification have been revised to delete the references to the claims.

For at least the foregoing reasons, Applicant respectfully submits that the disclosure as a whole is not objectionable, and therefore respectfully requests withdrawal of the objection thereto.

Rejection under 35 U.S.C. § 102

In the Office Action, beginning at page 3, Claims 1, 6, and 12 were rejected under 35 U.S.C. § 102, as reciting subject matters that allegedly are anticipated by U.S. Patent No. 6,323,654, issued to Needle et al. ("Needle"). Beginning at page 4, Claims 7-10 and 18 were rejected under 35 U.S.C. § 102, as reciting subject matters that allegedly are anticipated by U.S. Patent No. 3,896,376, issued to Senniger. Applicant respectfully requests reconsideration of these rejections.

The present application describes, among other things, an exemplary embodiment including a conductor which has a plurality of partial conductors running essentially in parallel between a first end and a second end of the conductor. See, e.g., pages 5-7 of the present application. The partial conductors - although insulated - are all connected at the first end and/or at the second end of the conductor by means of a short circuit. Accordingly, when the conductor

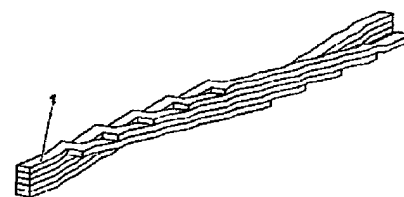
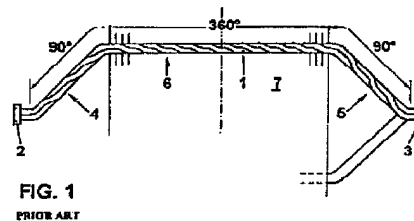
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conducts a current of a certain magnitude and direction, all partial conductors conduct a part of that current, and all partial currents in the partial conductors have the same direction, *i.e.*, the direction of the current through the conductor. As all the partial conductors are short-circuited at least at one end of the conductor, the conductor cannot be used as a multi-wire cable, in which currents of different direction are sent through different wires.

An exemplary embodiment of such a conductor is a winding bar of a high power generator, an example of which is illustrated in Figs. 1 and 4 of the U.S. Patent No. 5,777,417, granted to Haldemann, reproduced herein. The winding bar of Fig. 1 is a so-called Roebel bar, which includes a plurality of mutually electrically insulated conductor elements or partial conductors 1. The conductor elements 1 are electrically and mechanically connected to one another at the ends of the bar by means of eyes 2 and 3. The conductor elements 1 are transposed according to the well-known Roebel scheme to optimize the electromagnetic characteristics of the winding and the generator. As this optimization is degraded when there is a short-circuit between any two of the partial conductors in the conductor section between the first end second end, there is a need to detect and locate such a short circuit on the conductor.



According to exemplary embodiments of the present invention, this can be done despite the already existing short-circuits at the ends of the first conductor by arranging a second, auxiliary conductor parallel to the first conductor, measuring the propagation behavior of time-varying electrical signals on this two-conductor arrangement, comparing the measured propagation behavior with the known propagation behavior of a similar two-conductor arrangement including a similar reference conductor without an intermediate short circuit between its partial conductors and a similar auxiliary conductor, and determining the presence of partial conductor short circuits in the first conductor from the changes in propagation behavior

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given from the comparing process.

Claim 1 relates to a method for detecting partial conductor short circuits having a combination of steps including, *inter alia*, comparing a measured propagation behavior with a known propagation behavior of a second combined conductor comprising a second conductor as a reference conductor, said second conductor being similar to a first conductor but without partial conductor short circuits, and determining the presence of partial conductor short circuits within said first conductor from the changes in propagation behavior from said comparing.

The prior art, including *Needle*, fails to identically disclose or describe a method including combinations such as those recited in Claims 1 and 12.

Needle describes a method and apparatus for remotely changing the signal characteristics of a signal generator to be used to positively identify a pair of wires of a household wiring or cable installation (col. 3, lines 33-46). The signal generator is placed at one end of the wiring and injects the generated signal into certain wires of the wiring while a person at the other end of the wiring changes the impedance of any pair of wires of the wiring by short-circuiting it. When those wires are short-circuited which are connected to the signal generator, a detecting means at the generator detects the impedance change and changes the signal characteristics of a signal generator. Thus, according to *Needle*, the wires can be positively identified at one end, which are connected to the signal generator at the other end of the wiring.

The method described by *Needle* is therefore different from that described and claimed in the present application, at least because *Needle* does not describe or suggest partial conductors of a conductor permanently short-circuited at least at one end of the conductor, nor steps of comparing and determining as recited in the pending claims.

Accordingly, *Needle* fails to disclose each and every step recited in the combinations of Claims 1 and 12.

Claim 7 relates to a device useful for detecting partial conductor short circuits having a combination of elements including, *inter alia*, a conductor comprising ends and a plurality of mutually insulated partial conductors being short-circuited at least at one end of said conductor, and an auxiliary conductor, arranged in parallel and at a fixed distance to each other in the

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retaining device, wherein the conductor is connected at one end via an input lead to a signal source, and wherein the auxiliary conductor is connected via a return lead to a measuring device.

The prior art, including *Sinniger*, fails to identically disclose or describe a device including combinations such as those recited in Claims 7-10 and 18.

Sinniger describes a circuit arrangement for testing the insulation of a commutator-type armature winding based on partial-discharge measurements, and for measuring the winding resistance of rotating electric machinery. The winding resistance between a pair of commutators segments is measured by connecting a DC test voltage source to the segments and measuring the magnitude of the corresponding test current. The insulation of the windings is tested by inducing damped sinusoidal oscillations in the windings through an inductor-stator surrounding the commutators-type armature winding. Thus, *Sinniger* describes insulation or short-circuits within windings, *i.e.*, between plural parallel sections of the same conductor, but does not describe short-circuits between parallel partial conductors of one conductor.

Accordingly, *Sinniger* fails to disclose each and every element recited in the combinations of Claims 7-10 and 18.

For at least the foregoing reasons, Applicant respectfully submits that the subject matters of Claims 1, 7-10, 12, and 18 are not anticipated by either *Needle* or *Sinniger*, are therefore not unpatentable under 35 U.S.C. § 102, and therefore respectfully requests withdrawal of the rejection thereof under 35 U.S.C. § 102.

Rejection under 35 U.S.C. § 103(a)

In the Office Action, beginning at page 6, Claims 2-5, 11, and 13-17 were rejected under 35 U.S.C. § 103(a), as reciting subject matters that allegedly are obvious, and therefore allegedly unpatentable, over *Needle* in view of the disclosure of U.S. Patent No. 5,977,773, issued to Medelius et al. ("Medelius"), or *Needle* in view of the disclosure of U.S. Patent No. 6,703,752, issued to Haldemann¹ (Claim 11 only). Applicant respectfully requests reconsideration of these

¹ Applicant notes that *Haldemann* was not listed on the PTO-892 that accompanied the Office Action. Applicant has therefore listed the document on the accompanying PTO-1449.

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rejections.

Medelius, like *Needle*, describes a method for testing cables which have a plurality of separate, insulated wires that can be accessed independently (see test leads 203, 305, 405 in *Needle*, clip leads 23 in *Medelius*). *Medelius*, however, fails to make up for the deficiencies of *Needle* with respect to the subject matters of the pending claims, at least because *Medelius* fails to disclose, describe, or fairly suggest the steps and elements lacking in *Needle* to begin with. Thus, assuming *arguendo*, that the hypothetical combinations, alleged to be obvious in the Office Action, were made without the benefit of an impermissible hindsight reconstruction of the claimed combinations in view of the Applicant's own specification, the proposed construct would still not include each and every step recited in the pending claims.

Haldemann, currently commonly assigned with the present application, describes a stator winding bar for an electrical machine, and has little or nothing to do with the household wiring described in *Needle*. Thus, while *Haldemann* describes a desirable stator winding bar, there is no motivation for one of ordinary skill in the art to look to *Haldemann* to solve a problem that *Needle* does not identify. Stated somewhat differently, the Office Action and *Needle* both fail to identify any problem for which *Haldemann* can provide a solution, and therefore there can be no motivation to one of ordinary skill in the art to look to *Haldemann* to attempt to make up for *Needle*'s deficiencies with respect to the subject matter of Claim 11.

For at least the foregoing reasons, Applicant respectfully submits that the subject matters of Claims 2-5, 11, and 13-17, each taken as a whole, would not have been obvious to one of ordinary skill in the art at the time of Applicant's invention, are therefore not unpatentable under 35 U.S.C. § 103(a), and therefore respectfully requests withdrawal of the rejection thereof under 35 U.S.C. § 103(a).

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U.S. App. No.: 10/625,468**Conclusion**

Applicant respectfully submits that the present patent application is in condition for allowance. An early indication of the allowability of this patent application is therefore respectfully solicited.

If Mr. Benson believes that a telephone conference with the undersigned would expedite passage of this patent application to issue, he is invited to call on the number below.

It is not believed that extensions of time are required, beyond those that may otherwise be provided for in accompanying documents. If, however, additional extensions of time are necessary to prevent abandonment of this application, then such extensions of time are hereby petitioned under 37 C.F.R. § 1.136(a), and the Commissioner is hereby authorized to charge fees necessitated by this paper, and to credit all refunds and overpayments, to our Deposit Account 50-2821.

Respectfully submitted,

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